Diminishing Returns to an Input: When the quantity of one input is increased while other inputs are held constant, the resulting change in output is called the marginal product of that input. Diminishing returns means the marginal product gets smaller as the quantity of that input gets larger.

Double Bottom Line: The twin goals of social enterprises to maximize profits and to maximize other net social benefits.

Fund-raising: The process of requesting and gathering voluntary contributions of money and property from individuals, businesses, charitable foundations, or governmental agencies.

Incremental Profit: The profit gain or loss associated with a given managerial decision.

Inefficient: A situation where there is a way of reallocating resources to make at least one person better off without making anyone else worse off (see Chapter 1).

Input: A resource or factor of production, such as a raw material, labor skill, or equipment employed in the production process.

Law of Diminishing Marginal Product: Says that once the quantity of the input is greater than a particular amount, diminishing returns occur. For example, assume that when the number of workers increases from 10 to 11, 6 additional units of output are produced. Then, according to the law, if the number of workers increases from 20 to 21, output will increase by less than 6 units.

Marginal Analysis: A basis for making various economic decisions that computes the additional (marginal) benefits derived from a particular decision and compares them with the additional (marginal) costs incurred.

Marginal Cost: The incremental increase in total cost that results from a one-unit increase in output.

Marginal Product of an Input: The change in total output associated with a one-unit change in the input, holding other inputs fixed.

Marginal Revenue: The change in total revenue that results from a one-unit change in quantity demanded.

Marginal Social Benefit: The change in total social benefit caused by a one-unit increase in an economic activity. Includes benefits to the buyer and to others affected by the activity.

Marginal Social Cost: The change in total social cost resulting from a one-unit increase in an economic activity. Includes costs to the buyer and to others affected by the activity.

Objective Function: A mathematical function used to measure success in meeting organizational goals.

Production Function: A formula specifying the maximum amount of output that can be produced for each level of inputs.

Program-Related Investments (PRIs): Social lending or investment by foundations as a way to further their charitable mission as well as generate income.

Rule for Profit Maximization: Choose the quantity that makes marginal revenue equal to marginal cost.
EXERCISES

1. Explain how you would apply the principle of “thinking at the margin” to the following nonprofit management situations:
   (a) Determining how many volunteers to recruit for a fund-raising event.
   (b) Deciding on the size of a committee to develop a strategic plan.
   (c) Deciding on the size of an ad in the newspaper to recruit for an open position in your organization.
   (d) Deciding how to allocate an increase in the annual grant from United Way to a variety of organizational uses.
   (e) Deciding how to distribute an annual budget cut across different departments of your organization.
   (f) Determining whether to undertake a fund-raising campaign or a commercial venture in order to increase organizational resources.

2. Why do organizations (nonprofits) frequently diverge from “optimal” performance and pursue some objective other than (or in addition to) the efficiency objective? Would you expect a greater divergence from the efficiency objective in:
   (a) A small nonprofit – like a day-care center?
   (b) A nonprofit hospital?
   (c) A government agency?
   (d) A social enterprise organization – like the Grameen Bank founded by Muhammad Yunus?

3. For the fund-raising example discussed in the text and illustrated by Tables 5.1 and 5.2, explain why the alternatives of direct mail and telemarketing may be subject to diminishing returns.

4. Explain why charities with the lowest average fund-raising costs are not necessarily the most efficient or making the best use of their fund-raising resources.

5. Some charitable service programs have diminishing returns and others do not. Give an example of each, explaining why there are or are not diminishing returns in each case.

6. Save the Wales is a nonprofit organization dedicated to the welfare of the Welsh people. Their costs of fund-raising are as follows:
<table>
<thead>
<tr>
<th>Donations</th>
<th>Total Cost</th>
<th>Average Total Cost</th>
<th>Average Variable Cost</th>
<th>Marginal Cost</th>
<th>Net Revenue</th>
<th>Cost Ratio (TC/D)</th>
</tr>
</thead>
<tbody>
<tr>
<td>$0</td>
<td>$1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>1.20</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>1.30</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>1.50</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>1.80</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>2.30</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>3.10</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>4.20</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>6.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>8.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>10.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>12.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(a) What is their fixed cost of fund-raising?
(b) Fill in the missing cells in the table above (except those cells with a dash).
(c) What is the marginal revenue when we move from one row to the next row?
(d) What amount of donations yields the largest net revenue? (Hint: if there is no row where the marginal revenue exactly equals marginal cost, pick the highest level of donations for which marginal revenue is greater than marginal cost.)
(e) What amount of donations leads to the lowest cost ratio?
(f) How much net revenue would Save the Wales give up if it minimized the cost ratio rather than maximizing net revenue?
(g) Suppose Save the Wales chooses to maximize gross donations, subject to at least breaking even on the fund-raising program. How much would be donated?